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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/584,148 | 06/22/2006 | Dagmara Ortmann | 291685US0X PCT | 1447 |

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| 22850 | 7590 | 11/30/2007 |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. | | |
| 1940 DUKE STREET | | |
| ALEXANDRIA, VA 22314 | | |

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| EXAMINER | |
| NWAONICHA, CHUKWUMA O | |

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| ART UNIT | PAPER NUMBER |
| 1621 | |

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| NOTIFICATION DATE | DELIVERY MODE |
| 11/30/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/584,148

Applicant(s)

ORTMANN ET AL.

Examiner

Chukwuma O. Nwaonicha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/22/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Current Status

1. Claims 1-15 are pending in the application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gatrone et al., {The synthesis and purification of the carbamoylmethylphosphine oxides, Solvent Extraction and Ion Exchange (1987), 5(6), 1075-116} in view of Martin, {Facile reduction

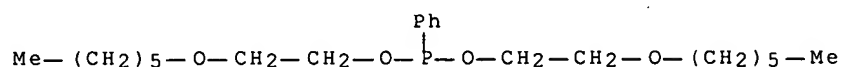
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in the synthesis of phosphorylcholine affinity columns, Tetrahedron Letters, 37, No. 44, pp. 7921-7924, 1996}.

Applicants claim a process for preparing trivalent organophosphorus compounds by condensing a halogenated phosphorus compound with hydroxyl compound in the presence of a basic ion exchange resin; wherein all the other variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Gatrone et al. teach the synthesis and purification of sym. and unsym. carbamoylmethylphosphine oxides and trivalent organophosphorus compounds. By reacting halogenated phosphorus compound with hydroxyl compound to produce a trivalent organophosphorus compound shown below. Several methods for purifying the extractants were studied. The use of acidic and basic ion exchange resins in conjunction was developed for the removal of acidic impurities, which are very troublesome to the extraction performances of these compounds. See the abstract and page 1080



Ascertainment of the difference between the prior art and the claims (M.P.E.P. §2141.02)

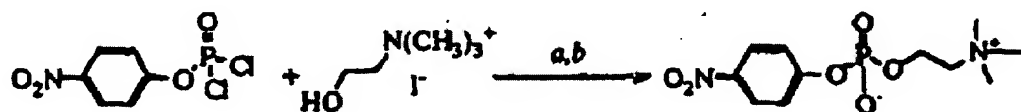
Gatrone et al. process for preparing trivalent organophosphorus compounds differs from the instantly claimed process in that applicants' claim a process that employs a solvent as recited in claim 11 while Gatrone et al. teach a process that employed pyridine as a reaction medium. Another difference between applicants

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claimed invention and the prior art of Gatrone et al. is that applicants claim a process that employs a basic ion exchange resin while Gatrone et al. teach a process that employed acidic and basic ion exchange resins in conjunction.

However, Martin teaches the reacting of halogenated phosphorus compound with hydroxyl compound in the presence of a basic ion exchange resin as shown below.

See page 7922.



Finding of prima facie obviousness--rational and motivation (M.P.E.P. §2142-2143)

The instantly claimed process for preparing trivalent organophosphorus compounds would have been suggested to one of ordinary skill because one of ordinary skill wishing to obtain trivalent organophosphorus compounds is taught to employ the process of Gatrone et al. and Martin.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the process conditions from the teaching of Gatrone et al. and Martin to arrive at the instantly claimed process for preparing trivalent organophosphorus compounds. Said person would have been motivated to practice the teaching of the references cited because they demonstrate that trivalent organophosphorus compounds are useful in industrial applications.

The Examiner notes that varying the reaction conditions in a chemical reaction is a well-known chemical practice to optimize the process efficiency of the system and does not constitute a patentable distinction.

Moreover, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne (Bonnie) Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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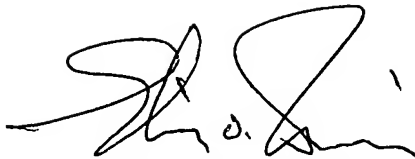
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Chukwuma O. Nwaonicha, Ph.D.

Patent Examiner

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PRIMARY EXAMINER

Yvonne (Bonnie) Eyler
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